



Clinical Research Associates Newsletter

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SUBJECT: RESIN CURING LIGHT, CORDLESS

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Currently, many different types of dental materials are cured using visible light, & clinicians now find that curing lights have become an *essential* item. Newest curing light described below includes many innovative convenience features, plus unique distinction of being first cordless curing light that has high intensity output for 12 consecutive minutes.

1. PRODUCT NAME: PROLITE CORDLESS CURING UNIT**2. COMPANY NAME, ADDRESS, & TELEPHONES:**

3. COST: \$995 Includes curing light with charging base,
8 mm 60° curing probe, 1 battery pack,
& attached eye protection shield.
\$185 13 mm 80° light probe.

L.D. Caulk/Dentsply
Lakeview & Clarke Avenues
Milford, DE 19963 U.S.A.
Telephones: (800) 532-2855 & (302) 422-4511
Facsimile: (302) 422-3480

4. PRODUCT DESCRIPTION:

Cordless visible curing light with "gun" design. 35 watt lamp is operated by rechargeable NiCad battery pack in handle. Whole unit weighs about 4.5 pounds & measures 5 x 12 x 9 inches. "Gun" alone weighs 1.5 pounds. Charging base alone weighs 3 pounds & measures 7 x 5 x 9 inches. 110 & 220 volt units are available.

5. ADVANTAGES:

- A. First cordless curing light that has high intensity output sustained for 12 consecutive minutes. Output of properly charged ProLite is about 400 mW/cm² which produces resin cure comparable to most powerful light on world market (Optilux 401 by Demetron). (Test resins were XRV Herculite color A3, Prisma TPH color U, Silux Plus color UO.)
- B. Chairside convenience. Freedom from restraint & weight of cord must be experienced to be appreciated.
- C. Excellent portability allows one light to serve several operatories.
- D. Well designed timer. LCD window on back of gun displays timer count down for 10, 20, 30, 40, 50, or 60 seconds OR count up for unlimited on-mode. Previously used setting is maintained until changed manually. One audible beep sounds when timer is set, when light is activated, & at end of time cycle when light shuts off.
- E. Built-in radiometer on charging base— By placing activated light probe onto target, LEDs indicate intensity level of light in milliwatts per square centimeter. Radiometer can be used with any curing light.
- F. Simple controls. Pressure switch in "trigger" position activates or deactivates light. Similar switch on opposite side of handle selects desired cure time.
- G. Accommodates 5 different diameter light probes (3 mm 90°, 8 mm 60°, 8 mm 90°, 13 mm 80°, 13 mm 0°). Many clinicians have not realized that 13 mm diameter light guides are the most useful because only they offer homogenous cure of restorations on large teeth (i.e. veneer on facial of upper central & MOD on lower first molar). Currently, all curing lights on market come with light guide about half of optimum diameter, & wider diameter light guides either must be purchased separately or are not available.
- H. Easy to service. Lamp & battery pack are easy to change.
- I. Good longevity of battery pack & bulb. Battery pack has minimum of 1000 12-minute use-cycles & bulb has about 45-hour life.
- J. Automatic controls keep cordless light charged & ready to use. When placed into cradle on charging base, cordless light automatically shuts off & charging base provides continuous recharge without over-charging.
- K. Clean appearance. Both "gun" & charging base are made of smooth, white plastic.

6. DISADVANTAGES:

- A. Cost. Although cost is higher than standard plug-in lights, easy portability can allow one light to take place of several plug-in models & price includes a built-in radiometer that can be used with any brand of curing light.
- B. For maximum battery pack life, batteries should be discharged monthly by operating light 12 minutes, then charging 1 hour. This may not be necessary if light is used regularly for times close to 12 minutes.
- C. Comes with 8 mm light guide, & 13 mm design must be purchased separately.
- D. Both charging unit & "gun" are relatively large.
- E. Heavier than conventional curing light "guns". 22 ounces vs. about 11 ounces for popular conventional lights.
- F. Cooling fan noise continues for 5 minutes after light is deactivated, regardless of time light is operated.
- G. Charging base must be connected to continuous power supply. This precludes plugging into a dental unit that cuts off all electricity when its main switch is turned off at end of work day.

7. CRA CONCLUSIONS:

The PROLITE CORDLESS CURING UNIT operates 12 continuous minutes & cures resin in manner similar to high intensity plug-in lights. Cordless design allows convenience of unsurpassed portability & chairside flexibility. Numerous convenience features such as excellent timer design, built-in radiometer, accommodation for 5 different light guides, etc. add to usability. Cost & larger, heavier "gun" are main disadvantages. ProLite electronics set new standard for resin curing.

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SUBJECT: DRY FIELD OPERATION, NEWEST CONCEPTS

New demands for easier & faster rubber dam application have resulted in innovative new products. In spite of long history, rubber dam is still the best way to isolate the operating field for restorative & endodontic procedures. Dry field operation produces:

- (1) Higher quality treatment. Many current concepts demand isolation of operating field to achieve clean treatment site free of contamination. Typical procedures requiring isolated field are: bonding amalgam or composite resin, placement of resin or hybrid-glass ionomer, tooth preparation, desensitizing, seating tooth colored inlays & onlays, etc. With these procedures, contaminated field can cause bond to be reduced or eliminated, tooth sensitivity, & reduction in restoration longevity.
- (2) Faster & easier procedures. Patients cannot talk, cough, expectorate or otherwise delay treatment while rubber dam is in place. This allows treatment without interruption. It has been estimated that routine use of rubber dam for restorative dentistry increases speed 40% or more.
- (3) Reduces spread of oral microbes during treatment. Studies have shown that operating with rubber dam reduces airborne microorganisms 78-98% (Cochran, M.A., et al., JADA '89; 119:141 & Samaranayake, L.P., et al., J Dent Child '89; 56:442).

Following information includes several new, useful rubber dam products that were rated highly by CRA Evaluators.

A. 1. PRODUCT NAME: RUBBER DAM CLAMPS

2. COMPANY NAME, ADDRESS, & TELEPHONES: Ash/Dentsply
3. COST: \$8.75 Per Clamp. 570 West College Avenue
Telephone: (800) 877-0020 extension 180
York, PA 17405 U.S.A. Facsimile: (717) 845-7511 extension 180
(717) 843-5951

4. EVALUATION SUMMARY:

Set of 6 metal, non-disposable clamps that allow rubber dam application for nearly *all* clinical situations.
Rated excellent or good & purchase recommended by 94% of Evaluators.

B. 1. PRODUCT NAME: MAXIMA DISPOSABLE DENTAL DAM CLAMPS

2. COMPANY NAME, ADDRESS, & TELEPHONES: Henry Schein, Inc.
3. COST: \$1.00 Per Clamp. 135 Duryea Road
Telephone: (800) 372-4346
Melville, NY 11747 U.S.A. Facsimile: (516) 843-5500
(516) 843-5665

4. EVALUATION SUMMARY:

Two sizes of plastic disposable rubber dam clamps—one fits premolars & one fits molars. Clamps are radiolucent, flexible, & easily applied. They fit fully erupted teeth with normal anatomy, but they do not fit *all* teeth. Disadvantage is they are relatively bulky. Useful for both restorative & endodontic procedures.
Rated excellent or good & purchase recommended by 75% of Evaluators.